DOCUMENT RESUME

ED 370 714 PS 022 448

AUTHOR	Wylie, Cathy
TITLE	What Research on Early Childhood Education/Care Outcomes Can, and Can't Tell Policymakers.
INSTITUTION	New Zealand Council for Educational Research, Wellington.
REPORT NO	ISBN-0-908916-65-5
PUB DATE	94
NOTE	41p.
AVAILABLE FROM	Distribution Service, New Zealand Council for Educational Research, P.O. Box 3237, Wellington, New Zealand.
PUB TYPE	Information Analyses (070)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Cross Cultural Studies; *Day Care; Day Care Centers; *Day Care Effects; Educational Quality; *Educational Research; Family Day Care; Financial Support; Foreign Countries; Government Role; *Outcomes of Education; *Preschool Education; Public Policy
IDENTIFIERS	*New Zealand; United States

ABSTRACT

This overview of the research on the educational outcomes of early childhood education and care focuses on issues and research of particular relevance to New Zealand. It explores the effects of early childhood education duration, type, and quality on the outcomes for children, comparing studies done in the United States and elsewhere to the situation in New Zealand. Overall, the report found substantial evidence that quality early childhood programs had a very positive effect on young children, especially those from disadvantaged backgrounds. Programs of poor quality, however, had neutral or even negative effects on the children involved. Positive outcomes extended beyond individual children and their families to society as a whole. The report found no substantial differences in the effectiveness of center-based or home-based care, or in for-profit and not-for-profit programs, provided they were of reasonable quality. New Zealand's bulk funding (per capita aid to centers) and systematic regulation of early childhood education and care was seen to be more effective than the haphazard funding and fragmented administration and regulation of early childhood education and care in the United States. Contains 142 references. (MDM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 370 714

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

K.A. Pickens

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

PS 022418

BEST COPY AVAILABLE

What Research on

Early Childhood Education/Care Outcomes

Can, and Can't Tell Policymakers

Cathy Wylie

Available from: Distribution Service, New Zealand Council for Educational Research, P.O. Box 3237, Wellington, New Zealand (Fax 64 4 3847933)

New Zealand Council for Educational Research

New Zealand Council
for Educational Research,
P O Box 3237,
Wellington,
New Zealand.

© NZCER, 1994
ISBN 0-908916-65-5

TABLE OF CONTENTS

1	**Introduction**	1
2	**Research on Early Childhood Education/Care- Some Necessary Background**	2
3	**Outcomes of Early Childhood Education/Care**	4
	In General - For Children	4
	Model for Examining Quality in Child Care	5
	"At Risk" Children	6
	Children from Middle Class or Non-Disadvantaged Homes	11
	Language/Culture Retention	13
	Duration of Early Childhood Educare Experience	13
	Age of Child	14
	Number of Hours of Educare per Week	15
	Type of Early Childhood Educare	15
	Home-based and Centre-Based Educare	16
	Not-for-Profit and For-Profit	18
	Outcomes for Parents and Families	19
	Negative Outcomes of Early Educare	21
4	**Funding and Regulation Factors Bearing on the Provision of Early Educare**	21
	Funding: Supply-side, Demand-side, or Both?	21
	Vouchers (Income-related Subsidies)	24
	Administrative Costs	25
	Regulations	26
5	**Some Conclusions for the Present New Zealand Situation**	27
References		29

ACKNOWLEDGEMENTS

This work was produced for the Ministry of Education. I am deeply grateful to Keith Pickens and Barbara McKenzie of NZCER Information Services, who within the very short time-frame of four weeks searched data-bases and indexes for relevant material and interloaned it, and to Gloria McGirr for her work in going through the material. Very helpful references and material were provided by Pam Cubey, Sarah Farquhar, Anne Meade, Heather McDonald, Val Podmore, and Anne Smith, and from overseas, Bengt-Erik Andersson (Sweden), Gay Ochiltree (Australia), Christine Pascal (England), and Alan Pence (Canada).

1 INTRODUCTION

This overview of the research literature on the outcomes of early childhood education/care (educare) was commissioned by the Ministry of Education to provide a summary of that research which is of particular relevance to New Zealand policymakers, and to set that research within the New Zealand context. It focuses on the following areas:

1. The outcomes for children from the full range of social backgrounds. The main focus is on educational outcomes, with additional material where available on other outcome aspects such as welfare spending, language and culture retention, and work/education outcomes for parents. Both positive and negative outcomes are covered.

2. The relationships, if any, between outcomes for children and:

   - duration of early childhood education;
   - number of hours per week of early childhood education;
   - age of the child when receiving early childhood education.

3. Any differences in outcomes which are due to differences in service type, for example, home-based educare in comparison with centre-based educare.

4. The effects of different funding and organizational regimes (including targeting and universal funding and different modes of delivery) on the provision of early childhood education services, including quality.

The search used the ERIC database, New Zealand databases, and the Australian, British and Canadian Education Indexes. New Zealand and overseas researchers were also consulted for references and fresh material. The search provided over 250 references, not all of which were directly relevant to this overview. This work also draws on and refers to the recent literature review done by my colleague Valerie Podmore, *Education and Care - A Review of International Studies of the Outcomes of Early Childhood Experiences*.

2 RESEARCH ON EARLY CHILDHOOD EDUCATION/CARE - SOME NECESSARY BACKGROUND

Early childhood educare usually refers to educational experiences outside the parental home before the start of formal schooling, often, but not always (e.g. playcentre), under the responsibility of people other than a child's parents, in the company of other children.

The original research interest in the outcomes of these experiences stemmed from the historically unique development in Western societies of households based on the nuclear family, with one partner engaged in non-paid childcare, housework and family support, and another engaged in paid work outside the home. As many analysts note (e.g. McGurk et al 1993, Silverstein 1991), this gave rise to assumptions that 'mother-only' care of young children was both natural and proper, and that early childhood educare belonged to the 'private' and individual domain rather than the social domain. Early childhood educare, other than sessional care such as kindergartens, therefore invited both suspicion, questions about its public funding, and investigation.

What has been called the 'first wave' of research into early childhood education (Scarr & Eisenberg 1993) focused primarily on the effects of full day care, particularly on the attachment between mothers and their children. Both full day care and home-care were treated as homogeneous categories. The limits of this approach gradually became apparent, and led to a focus in the 'second wave' of research on differences within full daycare experiences. This enabled the discovery that the quality of those experiences is critical to the outcomes for children, and others.

Investigations of different outcomes for children have also yielded a consistent set of inter-related variables which impact on these outcomes. However, they do not guarantee them (Bredekamp 1989), and the most recent wave of research has focused more on different patterns of interaction between early childhood educare and a child's home/family life, including such matters as the quality of the early childhood educare, child temperament, parenting styles, and maternal satisfaction with role, as well as socio-economic status (Ochiltree and Edgar 1990).

Most research work has been carried out on full day provision rather than part day sessions (such as those provided in New Zealand by kindergartens, playcentres, and playgroups). There has been a concentration on the outcomes for children who enter full day care before their first birthday, since this was seen as the most vulnerable period for the development of secure mother-child attachment. Work on the outcomes for children who start their early childhood education at the age of 3 and 4 (the majority in New Zealand) has mainly been linked to 'intervention' projects and programmes targeted at low-income 'high risk' groups; and most of this work has been carried out in the USA. Most of the limited amount of research comparing the outcomes of part day with full day provision (usually corresponding

to different amounts of early childhood educare per week) has also been carried out in the USA, either in the context of the intervention evaluations, or in the context of a policy shift of the starting age for formal schooling to age 5 (and sometimes 4).

Research on the outcomes for children from different social groups has also been associated mainly with the intervention projects. The general social acceptance of part day (sessional) educare as a desirable extension of children's experiences before they entered formal schooling has meant there has been less research interest in this area. Part day care also provided no challenges to the then conventional association of mothers with home rather than workforce participation. An additional reason for the research focus on the intervention projects was that evaluation was an integral part of them, and so adequate research funding (often scarce for this area) was available.

While there is substantial use of comparisons and control groups in the research literature, there is a limit to the degree to which a purely experimental approach can be taken in this field. This reflects the complexity of patterns of early childhood educational experience and use in real life (eg Lamb & Sternberg 1990) - particularly when related to changes in family life - as well as ethical considerations. A purely experimental approach would mean denying children early childhood educare or putting children in inadequate settings. Where these are found 'naturally', however, comparisons can and do occur.

As the scope of the research into the outcomes of early childhood educare has become more sophisticated, so too have its measures. The early reliance on IQ scores has shifted to adult (teacher and/or parent) ratings and (researcher) observations of children's behaviour and performance. While academic achievement as measured on existing school tests features heavily in the literature (often for pragmatic reasons), there has been an increased emphasis on the kinds of competencies and skills which are known to be linked to motivation, acquisition of knowledge, work habits (including exploratory behaviour), and productive social relations in both school and the world beyond. There has also been more attention to other indicators which provide the obverse, cost-related measures of adult (in)ability to participate as a full member of society, such as unemployment and crime.

The return to the paid workforce of mothers of children in this age-group in large numbers (for example, 37% in New Zealand in 1991, 58% in the USA in 1990) has also shifted both the context of policy debates and research questions. As Verry (1990, p. 4) puts it:

> "...one is never beginning from scratch: childcare is not being introduced into a no-childcare situation."

The interest in the field now is in the kinds of support and provision which are most likely to produce the positive outcomes for children and others which research has linked with good quality early childhood educare, and to avoid those associated with poor quality early childhood educare (Howes et al 1992, McCartney et al 1985). The framework in which this

search takes place does not isolate early childhood educare, but looks at its integration (or lack of it) with other social policy, particularly the labour-market (Andersson 1993b, Phillips 1991, Verry 1990).

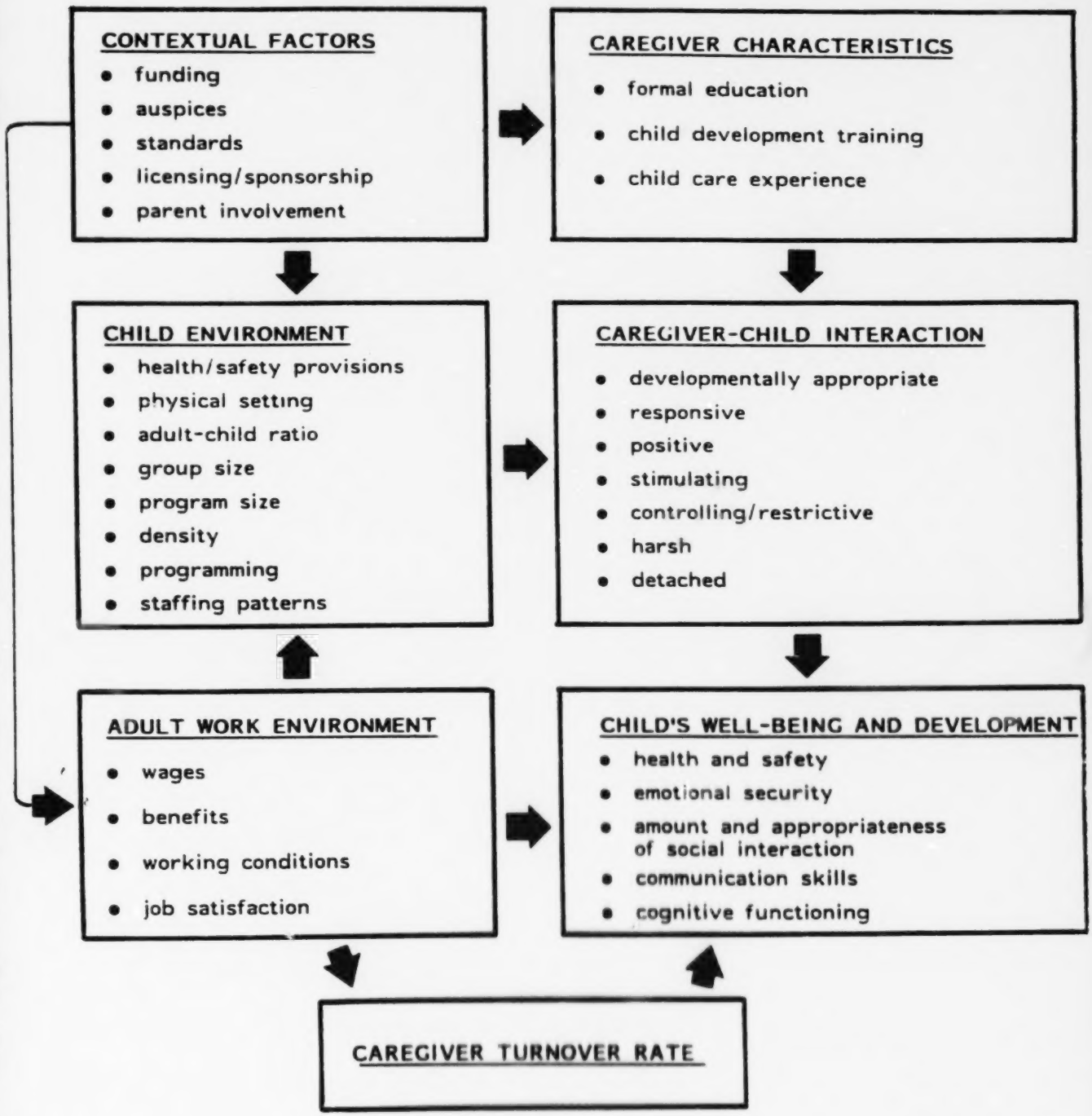
3 OUTCOMES OF EARLY CHILDHOOD EDUCATION/CARE

In General - for Children

On the basis of the substantial research in this field, there is now a general consensus amongst researchers, from a variety of disciplines, that good quality early childhood educare benefits children (of whatever social group), their families, and society as a whole (e.g. Barnett 1991, Doherty 1991, Esbensen 1985, McGurk et al 1993, Podmore 1993, Sylva and Wiltshire 1993, Verry 1990). The outline of the main hallmarks of good quality, their interrelationship, and their bearing on children's wellbeing and development on the next page is taken from Doherty. One should add to it the importance of stability of caregiving (parental and non-parental), particularly, but not only, in the first year of life (e.g. Howes & Hamilton 1992, Kisker et al 1991).

DIAGRAM 1

MODEL FOR EXAMINING QUALITY IN CHILD CARE



Some of these benefits occur at the time a child participates in early childhood education. Milburn (1982), for example, found three year old Christchurch boys had higher levels of behaviours associated with useful social behaviour after six weeks of playcentre attendance than their matched peers without preschool attendance. Vandell (1979) in an experimental study found male three year olds who had had six months or more participation in a part day play-group had enhanced their interaction with their parents.

The value of this is twofold for the child. First, interaction with adults is a vital source of children's language development, which is central to cognitive and academic performance. Second, children are active partners in their relations with their parents, and changes which make interaction with them easier or more enjoyable are likely to increase positive reactions and support from parents. There is also a gain for parents, and those associated with them.[1]

The concurrent benefits of good early childhood/education care feed into the more cumulative benefits. These include more independence in work habits in the school environment and better relations with peers, thus allowing the classroom to be a more productive environment for everyone in it. Studies have found better academic or cognitive performance[2] for children with early childhood education experience than their 'home-raised' peers (Alexander & Lovelace 1988, Applegate 1986, Cryan 1992, Gullo & Burton 1992, Howard 1986, Jones 1988, Ramey et al 1983, Sevigny 1987, Washington State Office of Community Development 1990,) and positive changes in aspects such as school attendance, task-orientation (Copple et al 1987, Griffin & Fein 1988) and health (Scarr & Eisenberg 1993, p. 622). Improved health emerges where early childhood education centres offer immunizations or health checks, and have regular links to health services, as used to happen with public health nurse visits to kindergartens and childcare centres in New Zealand, and is intended to happen in the family service centres currently being piloted in 7 low-income areas.

'At Risk' Children

The results of early childhood educare upon IQ scores have disappointed those who rested their hopes of turning round poverty and social disadvantage on what Zigler (1987) has called the 'inoculation' theory of intervention at this stage of life. The very real gains of the

---

[1] There are indications in the literature of further inter-relations with parental well-being which feed into other spheres (e.g. Ochiltree and Edgar 1990) such as the the lesser likelihood of child-related stress which could manifest itself in the workplace or public life, and the greater likelihood of increased energy for other domains of life, such as voluntary work and health-related recreation.

[2] For example, the finding quoted by New York education officials to a Congress committee (Joint Economic Committee, 1989, p 27) of a survey of New York third grade students which found that 50% of those who had attended half or full day kindergarten or prekindergarten were reading at or above their grade level, compared to 33% of those who had not attended any kindergarten or prekindergarten.

interventions have to some extent been overlooked or dismissed because of these high expectations and reliance on IQ scores as the most valid indicator of competence.

'At risk' children who have participated in a range of programmes with different entry ages, curriculum approach, staff:child ratios (though usually better than the local day care norm), staff training, hours of attendance, and parental involvement have usually done better initially at school than matched control groups (e.g. Layzer et al 1989, Lee et al 1989). Some longitudinal studies show that the gains are maintained (Brock 1991, Paseo 1987, Rachal and Garbo 1988, Schaefer 1985, Sevigny 1987). But in other studies children have fallen back to the same level of achievement as their matched peers who have not had intervention - though they still have fewer grade retentions and special placements, and a higher rate of graduation (Copple et al 1987, Fuerst & Fuerst 1993, Reynolds 1991). In other studies, children have done better than their matched peers, but have not been able to maintain their academic achievement at the level attained by their peers from more advantaged homes (Heath & Platt 1988, Maryland State Department of Education 1991, Ramey 1988). Some interventions have done better with girls than boys (Fuerst & Fuerst 1993, Hans 1987).

Various factors which might explain this 'fading' or 'wash-out' effect have been put forward, with some beginning to be more fully explored. The authors of the Maryland State study, noting a plateau effect in language achievement compared to mathematics, relate it to the role that knowledge and experience play in language, and the more restricted experiences available to children from poor homes.

Negative effects have been found with particular curriculum approaches, particularly approaches which are strongly didactic, and which most resemble formal school approaches (Marcon 1990). Successful early childhood education depends on a rather different approach: heavily experiential, through 'play' which develops exploration, persistence, innovation, representation, understanding of the function of rules, learning to take the part of others, and which integrates experience while challenging it[3] (Bruce 1991). Eight years after a curriculum intervention which emphasized a problem solving approach, the students of a US kindergarten serving disadvantaged children were still achieving higher than their peers (Rothenberg 1990). By contrast, inappropriate curriculum approaches can hobble children, as English studies following children from nursery school or those admitted into primary school at age 4 have found (Podmore 1993).

The Paseo study where gains were maintained made a feature of including children from middle-class homes as well as children from disadvantaged and English as a Second Language homes, and noted language gains in particular for the latter group. Wright (1983) also mixed children from professional homes and those who came from poor homes, and found gains for

---

[3] [in play] "..children operate at their highest level of functioning, beyond their present-day capabilities, so that they become a 'head taller' than themselves..it lifts children onto another plane of functioning." (Bruce, p 35)

both maintained to grade 5. These are some of the few American interventions where the programmes have not been restricted to at-risk children.[4]

Like others analysing early childhood educare outcomes, Hans (1987) notes the critical role of a domain which is not in the control of early childhood educare provision: "the world into which we send young children after preventive intervention" (p 9). He mentions in particular stronger teacher expectations of "failure and irresponsibility" for low-income male children compared with their female counterparts, strong male peer networks, and lack of strong male role models in the study children's homes. Fuerst and Fuerst (1993) note that the boys who did best in the Chicago experiment they evaluated were those who had the longest intervention, (starting at 4 and going on till 11 or 13), in the one stable setting in the study (maintained through strong parental objection to it being amalgamated into the adjacent school as other programmes in the experiment had been). Copple et al (1987) note that the children who performed best on cognitive tasks were those whose parents had the strongest involvement in the Head Start programmes they were evaluating. These parents were also "happier, less anxious and depressed, and showed improved psychological wellbeing, compared to mothers who participated less." (p 25). They also note that it is not clear whether parental state of mind preceded involvement.

Ziegelman (1986) cites four additional studies showing a significant relationship between positive parental attitudes and child performance. Helmich (1985) highlights two aspects which characterized intervention programmes whose students maintained their academic progress in relation to more advantaged peers through the first years of school: structured parental involvement (volunteers in centres and/or work with the children at home) in their children's education, and continued intervention/attention during the initial school years.

> "The key seemed to be that if students learned skills and problem solving strategies well, they did not lose this knowledge. However, if intervention did not continue into the intermediate grades, low-income students were likely to lose ground against their middle-income peers." (p 4)

A study by Bralic (1983) of the impact of an early home-based intervention in a poor Chilean neighbourhood found no difference in development between those children whose mothers had had instructional help when they were infants, and those who had not - but did find the children with the highest ratings were those who had been to nursery school for a year or more before entering school. She concludes:

> "...if educational intervention is interrupted at 2 years of age, the results achieved in the course of the program disappear, and the performance of these

---

[4] Perhaps this seems all the more noteworthy in the context of Lauder & Hughes (1990) research on the effectiveness of having a good 'school mix' rather than drawing only from one social group alone, particularly if that group is low income.

children 4 years later is comparable to that of children who had no preschool experience." (p 25)

The studies of South American provision in the same volume as Bralic's paper also highlight discontinuities between early childhood educare and very formal approaches at primary school which can make it difficult to transfer skills and enter into the positive relations with teachers which are important to school achievement (see also Podmore 1993).

Fowler (1978) found differences between a control group and an intervention group starting full day care at 11 months favouring the intervention group in self-care skills, language skills, problem solving and reasoning at age 3. But by age 5 this group had lost its edge over their control group. Fowler noted attributes of the preschool provision (3 - 5) which seemed to contribute to this loss: high staff turnover; caregivers who were trained to work with infants rather than preschoolers; and a higher staff: child ratio.

Reynolds et al (1991) found that children with the least intervention performed at the lowest levels, compared to those who had two years of intervention (preschool and all day kindergarten). They advance as a possible factor the mobility of the study children after the intervention - 57% had changed schools at least once in the first four years of school.[5] They also suggest that researchers may be assuming uniform processes at work:

> ... a tendency among investigators to assume that models and factors used to understand children who are not at risk also apply to children at risk. This assumption may not be warranted. Different factors and processes may be at work that necessitate separate analyses. (p 3)

The difference which Kisker (1989) notes in the measures used in studies of outcomes for children from disadvantaged and advantaged homes appears to reflect some of these assumptions:

> "....cognitive development studies have tended to be on disadvantaged children (who are most likely to do poorly on them because of their cultural and social biases) while social development studies have tended to sample middle and upper middle class children." (p ii)

Doherty (1991) discusses the limitations of gains in IQ measure as a guide to cognitive processes in the course of looking at studies which found initial IQ gains:

---

[5] McGee et al (1984) using the Dunedin longitudinal data note more changes in school amongst the children with 'stable' behavioural problems at the age of 7 than amongst those without such behavioural problems.

> "..the findings should not be interpreted as indicating that a good preschool program can increase a child's intelligence. Instead what appears to happen is prevention of the decline in intellectual functioning which typically occurs around age 2 in culturally deprived children. The stimulation of the preschool program helps the child in the task of switching from concrete to abstract reasoning, and prepares the child to cope with the demands of the school setting." (p 11-12)

Woodhead (1990) posits that it is the timing of different behaviours which foster a different relationship with teacher(s) as the child starts school which matters for long term outcomes.

The longitudinal studies of early childhood intervention programmes for disadvantaged groups in the USA have also found benefits for child, others around the child, and the public purse with fewer grade retentions,[6] fewer referrals to special education services, a lower drop out rate (higher proportion of completion of educational qualifications), lower rates of teenage pregnancy, delinquency, and adult crime, and better employment rates, or, a return of the initial 'investment' through taxes paid on earnings, and fewer welfare benefit costs (Barnett 1991, Farnsworth, Schweinhart, Berrueta-Clement 1985, Seitz et al 1985).

Some work has also been done which identifies the tax-gains from mothers in general using child care for employment, and the stimulation of the local economy through their use of child care (Hai et al 1982). Verry (1990) presents possibly the most comprehensive framework for economic analysis of early childhood educare.[7] He cites Swedish research which shows that the cost of provision in this area was more than repaid through the taxes of employed mothers.[8]

Woodhead (1990) and Barnett note that some of the gains identified in the longitudinal studies of interventions are context-specific, particularly the savings within education. This is because of the heavy use of grade retention (or repetition) in the United States, and a somewhat different provison of special education services. While the practice of retaining or holding a child back a class has declined in New Zealand primary schools with an increased use of

---

[6] A 1986 estimate for New York was US$10,000 savings per child for remediation/grade repetition, and $50,000 per child over a lifetime. (*Education Week* 2/4/1986:1)

[7] Levin (1991) also provides a useful framework.

[8] It is somewhat sobering to compare the Swedish packaging of parental leave, affordable childcare of good quality, priority for single parents to such childcare, and a strong emphasis on the maintenance of workforce participation by single parents rather than encouraging them to stay at home, with the framing of New Zealand support for sole parents in terms of a simple income benefit, the Domestic Purposes Benefit, for those who do not participate in paid work. The difficulties of moving off the Benefit into paid work are described in Levine et al 1993.

cross-class groupings for different curriculum areas, it was nonetheless 22% in 1987. McDonald (1989) concluded that the particularly high retention rate among Maori boys was linked to their low level of school qualifications, through the likelihood that because of their retention, this group would come to the age when schooling was no longer compulsory before the fifth form year, when examinations for the first national school qualification (then School Certificate) were sat.

Children from Middle Class or Non-Disadvantaged Homes

The general view from the literature is that while the children who are likely to benefit most from appropriate and good quality early educare are those from poor homes, children from middle class homes also share in the benefits identified by research undertaken across the social spectrum. Contrary to initial views about the primacy of home life, they can also share the negative impact if the quality is poor (Howes et al forthcoming, cited in Galinsky & Friedman 1993, Vandell et al 1988), or the curriculum approach is inappropriate. There is mounting research-based criticism of US prekindergarten and kindergarten programmes which emphasize formal learning and testing (e.g. Sigel 1991), and of children's entry at 4 years of age to English schools (eg Osborn & Milbank 1987).

As with the research on outcomes for disadvantaged children, there are some intriguing differences in study findings on outcomes for middle class children. Pinkett (1985) cites three studies showing cumulative benefits for children in this group, some relating to skills and behaviours related to school success, others in the broader area of social competence. Her own study, however, shows no differences in academic achievement and social competence at third grade level between children who had attended preschool, and those who had not. Bowlin and Clawson (1991) also found no differences between these two groups in reading and mathematics scores in the first four grades. However Paterno (1984) did find differences positively related to preschool (kindergarten) attendance at third and fifth grades, as did Howard (1986) at the third grade.

Howard did not control for the socio-economic status of the children in her study, and wondered whether

> "..the parents who placed their children in kindergarten were of higher socio-economic status, and already provided their children with nurturance, encouragement, and an educational environment at home." (p 22)

Bowlin and Clawson felt that one of the limitations of their study was that they had no information on the children's personal background and home environment; and were limited

to already available school test data. All these studies were retrospective, and collected no data on the quality or programme of the early childhood educare attended.[9]

Larsen and Robinson (1989) reported on second and third grade children who attended an experimental centre part day programme which also offered a range of parental activities available to support children's learning. They found that the programme did not provide different outcomes for girls - but that it did for boys, in all areas but reading comprehension and mathematics. They conclude:

> "The fact that there exists [in the community where the research was carried out] such a high level of at-home parent involvement whether or not children attended preschool makes our findings of a preschool effect more impressive." (p 142)

McKinnon et al (1982) found no differences up to the fourth grade level between middle-class Canadian children who had attended a Montessori playschool, other preschools, or no preschool. Noting that parents make choices of programmes related to their impression of differences between them (though McKinnon et al did not look at the actual availability of different programmes in the geographic location of the study), the authors hypothesize that the lack of difference:

> "...may be due to the fact that the education system assumes all children entering kindergarten [first year] must be taught the same basic skills regardless of individual ability. Advanced children are held at the same learning pace as their peers with no academic skills. This might tend to retard any advances children (with preschool background) may have had at the beginning of the school year." (p 15).

Young-Loveridge's work (1987) on children's mathematical knowledge and skills in New Zealand has highlighted the fact that teachers may underestimate the level at which school entrants can work, even with the more differentiated curriculum approaches now used in the junior years of primary school.

It would be extremely difficult to mount comparative studies in New Zealand of middle-class children with or without early childhood educare experience per se, since it is now very rare for such children not to participate in some form of early childhood education.

---

[9] The absence of these data from studies probably owes itself as much as anything else to the cost of collecting such material, especially for studies including several hundred or thousand students. The use of retrospective and already collected data is also sometimes an artefact of cost, or of demand for quickly available or analysable data to feed into already occurring policy debates.

Language/Culture Retention

There are not many studies focusing on bilingual or immersion early childhood education provision, in part because the thrust to provide it is relatively recent. What has been written provides evidence of the substantial benefits to be gained for children, their families, and their communities (Podmore 1993). Campos (1985) outlines the positive findings of the evaluation of the Carpenteria immersion preschool for Spanish speaking children of age 3 - 4 of migrant farm workers. This included their later school performance, using English. He also describes the difficulties that the project went through, particularly in its initial use of untrained teachers, which was associated with a high turnover rate of staff. This experience reinforces the current emphasis of New Zealand's Maori immersion programme, Te Kohanga Reo, on improving the training of its (often voluntary) staff. It also reminds one of the discontinuity facing many students from kohanga reo when they enter the school system, give the small number of kura kaupapa (Maori immersion) schools, and the fact that even in Maori immersion classes in all schools, only 30% of the teachers were found to be fluent Maori speakers in a national survey (Hamilton, 1993). The contrast with the rather more seamless provision for Welsh speakers described in Podmore, 1993, p 23) is striking.

Duration of Early Childhood Educare Experience

Material relating to the length of early childhood education/ care experience occurs most in the comparison of different interventions, and in the comparison of different kinds of preschool. It is therefore difficult to separate duration cleanly from the programme associated with it. However, where this has been done (Gullo & Burton 1992, McKinnon et al 1982, Reynolds et al 1991, Schaefer 1985, Schweinhart & Weikart 1986) no marked differences in school outcome have been found where children have had between one or two years preschool experience just before starting school. This may, of course, reflect McKinnon et al's observation that school progress is more dependent on the starting point decided by the school, if it is uniform for all children, rather than on length of early childhood educare experience.

In their comparison of different outcomes for Head Start programmes Lee et al (1989) noted

> "particularly strong effects found after a year of the program for the most cognitively disabled students. If 1 year of an intense educational experience targeted for such children can show strong effects, the more abbreviated compensatory programs perhaps available to such children are unlikely to overcome what are likely to be especially poor school experiences." (p 13)

Andersson's (1993a) follow-up of Swedish children at age 13 found those who had entered full day care before age 1 had higher cognitive performance and better social skills than their

peers who entered later, or not at all. Interestingly, the differences between boys did not show up in the initial follow-up at age 8, indicating the existence of a 'sleeper' effect. This effect has been surmised by some US researchers to explain non-linear patterns of outcomes, and to explain positive outcomes for social behaviour and employment in teenage and adult years which were less evident in earlier school achievement measures. The existence of such an effect raises questions for longitudinal studies that cease their evaluation in the first few years of school. It also underlines the dependence of early childhood education outcomes on other life experiences.

Age of Child Starting Educare

Study of the effects of starting full-time early educare before the first year dominate the literature looking at any relationships between outcomes of that educare experience, and a child's age. The positive effects found by Andersson in Sweden, the country which has arguably the best quality early childhood educare provision, have not been found in studies of day care of a lesser quality in the United States (or in studies which did not collect data on quality), which more often found no effect, or negative effect on attachment with mother.

But Andersson's substantial positive effects have also been found in one study in the United States, of children who started attending a high quality centre full time, before 22 months (Field 1991). After many studies and much debate, the consensus amongst researchers now is that the outcomes for children who enter full-time early educare before their first birthday are dependent upon the quality and stability of that educare (Field et al 1988, Howes 1990, Howes 1991, McGurk et al 1993, Scarr & Eisenberg 1993). Factors which are also associated with outcomes for children are maternal feelings about employment, and about using full-time educare, and the degree of stress in families. Family stress is also associated with parental choice (or acceptance) of poorer quality early educare than for children from other families. Where a child's attachment to his or her mother is insecure, good caregiver/s can provide the secure attachment to one or more adults which is important for good child development.

Thornberg et al (1990) suggest from their comparison of children with different early educare histories that:

> "It appears that care arrangements over the entire preschool period affect children; not length of time away from home during infancy alone." (p 40)

They found little difference in outcomes for children which related to differences in their educare arrangements during the first year of their life (such as varying duration and time per week, as well as in- and out-of home educare).

At present, research in this area is unable to tell policymakers whether there is a 'right' age for early childhood educare to start. The evaluations of interventions for children from

disadvantaged homes would suggest that earlier is better than later, with the caveats that the programmes must be of good quality, and not discontinuous. They do not provide a clear 'must start-by' date. On the basis of Howes' most recent work, Galinsky and Friedman (1993) warn that:

> "It is very difficult to intervene successfully at age 4 when a child has spent 3 years in a poor quality setting." (p 5)

Number of Hours of Educare per Week

There is very little research which has a bearing on the question of whether any relationship exists between the amount of time a child spends each week in early educare, and the outcomes of their educare experience. No definite prescriptions can be offered. Most of the relevant research is to be found in evaluations of part and full-day kindergartens in the United States, for five year-olds. The results overall are inconclusive, mainly because it is difficult to untangle the effects of the number of hours per week from the curriculum emphasis, programme quality, and the match of the educare programme with the local school system.

Leben (1987) found greater gains for full-day programmes serving ESL children and those from low-income homes; and in the absence of an adequate budget to serve all eligible children, suggested that they be given priority in full-day programmes.

In an interesting example of how our understanding of children's learning at this age can be (mis)shaped by images of school classrooms and didactic teaching, Leben expresses his puzzlement that the gain for full-day children was not related to any increase in 'instructional' time compared to the other progammes. It was, however, related to the greater experience of their teacher in working with children of this age.

Type of Early Childhood Educare

The research relevant to any relationship between centre type and outcome is that which looks beyond mere differences in type, to differences in quality of provision between individual centres, which we know to be related to child outcomes. The three distinctions between types which have been of most interest to researchers (and, often, policymakers) are:

* whether or not the early childhood educare is offered in a caregiver's home, or within a centre setting;

* whether the early childhood educare is offered for profit, or not-for-profit; and

* whether the curriculum is developmentally appropriate.

Podmore (1993) has covered the importance of an appropriate curriculum for positive child outcomes. I shall concentrate here on the first two distinctions, which like many others, are not hard and fast. Each category contains great variation in quality (Lamb & Sternberg 1990, Melhuish et al 1990).

Because global quality[10] in this field is the outcome of the relations between a cluster of factors, it is also possible for different types of centre to arrive at the same quality rating while offering a different set of experiences.

The few New Zealand studies comparing type of provision have focused on sessional and centre educare, and have found no differences (Meade 1985, Smith and Bain 1978, Smith et al 1993). The 'Competent Children' longitudinal project currently in progress will considerably expand the data relating to this question, covering family day care as well as kindergarten, playcentre, and childcare (Hendricks et al 1993).

Home-based and Centre-based Educare

There is very little material available on private, unlicensed home care. Clarke-Stewart (1985) compared 80 two-three year olds from two-parent middle-class/professional families across four types in 63 settings: care at home by a 'sitter', family day care, nursery schools, and day care. She found the nursery school children were 8-9 months ahead of their peers being looked after at home by a 'sitter' in terms of their cognitive ability, social knowledge, and sociability with an adult stranger. Children who had been to day care had the highest scores in sociability with an unfamiliar peer, and in social reciprocity, and were the most independent.

The New York Infant Day Care Study in 1979 (cited by Pence & Goelman 1991) found children in centres had higher IQ scores than those in family day care at the age of 18 months (bearing in mind the caveats on the use of IQs as indicators of outcome).

Benn's 1985 study found no difference in attachment security for upper middle-class children related to their use of family day care or a sitter, but it did find higher maternal integration was associated with the use of a sitter.

Early childhood interventions comparing parental provision at home with centre provision show mixed results, perhaps reflecting the wide diversity in support for parents (Powell

---

[10] There are several standard measures of quality in early childhood education/care research. Scarr et al (1993) have recently found that - for pragmatic research purposes rather than for the purposes of programme development, licensing, or review - it is possible to impute global quality from a single indicator: the highest staff salary. This may not, of course, hold true in New Zealand, given the voluntary nature of playcentre and kohanga reo provision.

1989). The ECEAP longitudinal study (Washington State etc 1990) offered a programme which included an emphasis on parental involvement, health and nutrition and family support services. The children's cognitive and health[11] progress was significant, but:

> ".. these gains were concentrated among parents in the centre-based programmes, leading the study researchers to hypothesize that this may be the result of the networking that characterizes these programmes."

A recent Swedish study has found no differences between the family day care and centre provision offered in that country (Palmerus 1991). Other studies have found variations in quality within family day care which relate primarily to whether the caregiver is on her own, is regulated or is part of a scheme (in the USA, 'sponsorship'). Family day care which is regulated or licensed is more likely to offer better quality provision for children. Pence & Goelman's study of family day care in Victoria, B.C. found the same relationship between licensing and quality, even though the licensing was 'minimally' enforced, and the regulations were also 'minimal' (1991, p 87). Their follow-up study in Vancouver explored the differences between regulated and unregulated caregivers, and found that regulated caregivers were more likely to have had some education in child development, to see their work as a profession rather than good for themselves or providing company for their own child.[12] Berk (1985) found caregivers with higher education were more committed to child care as a profession, and were more likely to provide the encouragement and verbal stimulation which is associated with positive language development.

A national random sample of US early childhood centres and regulated family day care providers (Kisker et al 1991) found that sponsorship (affiliation to a community or voluntary agency programme, usually receiving federal and state funding) was the main factor in differences in the quality of provision in family day care. 'Teaching occurred around 50% more often in sponsored than in non-sponsored family day care' (p 110), the environment was safer for children, and more nutritious meals were provided. The latter may well reflect the availability of federal funding for food provision only through sponsored programmes. Rosenthal (1991) studied sponsored family day care providers in Israel, and found a link between more frequent supervision of providers (from outside the home) and positive interactions between providers and children.

---

[11] The authors thought their preliminary data on health outcomes indicated that this was be one of the most cost-effective aspects of the programme, citing national US figures of $11 savings in corrective health care and hospital costs for every $1 spent on immunization.

[12] Data from a small Wellington study of Barnardo's family day care providers shows that the main reasons for becoming caregivers were: a liking of children, a desire for their own children to have company, and a way to earn money at home (Neale 1982).

While the research to date suggests that isolated family day care providers may not provide early childhood educare experiences on a par with others, there is no consistent or conclusive evidence that either type (home or centre based) is always superior (or inferior) to the other.

Not-for-Profit and For-Profit

Differences between not-for-profit and for-profit provision are more apparent in the research. One national Canadian study (SPR Associates 1986) found higher ratings for items relating to child outcomes for government and not-for-profit centres compared with both chain and independent for-profit centres. The for-profit centres, however, had more flexible hours. Another (West 1988) looked at compliance and parental complaints in Metropolitan Toronto, and found that for-profit centres were much less likely to be in compliance with the applicable legislation for day nurseries than others (only 13% compared to 32% for church-operated centres, 34% for non-for-profit centres, and 68% for workplace centres). Looking at complaints, West found slightly more lodged against for-profit centres: 34% compared with 28% of church-operated, 23% with a community/parent board, and 13% for other not-for-profit centres. A Quebec study mentioned by Doherty (1991) also focused on complaints, and found 10% of the for-profit centres had had valid complaints made against them, compared to 2% of the not-for-profit centres.

Salaries in for-profit centres are consistently lower, and linked with higher turnover (instability) rates - for example, 35% of the for-profit centres in Quebec in 1988 had a turnover rate of 40% or more compared to 20% of the not-for-profit centres.

A Connecticut study found more not-for-profit centres offering consistently higher quality, but the differences were not significant, and it could not be said that quality was poor in for-profit centres (Kagan & Newton 1989). The authors felt the "fairly stringent" state regulations were a factor in the performance of the for-profit centres.

While it is sometimes more likely for not-for-profit centres in the USA to receive government funding, the US National Child Care Staffing Study (Whitebook et al 1990) found that whether or not they did get government funding, they were more likely than for-profit centres to provide appropriate caregiving and developmentally appropriate activities. They also tended to spend more of their budgets on their staff. There was a direct relation between the proportion of a centre's budget allocated to staffing and the quality of caregiving and curriculum.

In New Zealand, Gardiner (1991) used Ministry of Education data on proportion of staff trained, staff: child ratio appropriate to the age mix of the children, and staff costs as a proportion of budget as a gauge to quality. He found lower, but not significantly lower, quality in 'commercial' full day sessions (65% compared with 73%). The proportion of budget allocated to staffing was also lower in full day commercial centres (57% compared with 70% for community full day; commercial sessional was also lower - 50%, compared to

67% for community sessional). Further investigation will be needed to see if the Whitebook et al finding of a relation between proportion of budget spent on staffing and quality of programme and staff-child interaction (which Gardiner had no data for) will necessarily hold in New Zealand.

Podmore & Craig (1991) in their study of infant and toddler care found few major differences between for-profit and not-for profit centres, though there was more touching, holding and hugging of children in the latter (p 18).

The recent Education Review Office review of the quality performance of early childhood centres (ERO 1993) found some differences related to for-profit status amongst those reviewed in Manukau, and a somewhat lower proportion of those offering high quality provision (4 out of 13 compared to 4 out of 8 of the not-for-profits). However, these numbers are very small. The overall descriptions of 26 Manukau (both profit and not-for-profit) and 11 Canterbury (all for-profit) childcare centres show variation in provision which is linked in the ERO report to staff training and low (but regulation) staff: child ratios for younger children. A concern about lack of training or inadequate training is also apparent in the sections in this report on not-for-profit centres, rural playcentres and Te Kohanga Reo. Staff turnover is identified as a factor contributing to poorer practice for the not-for-profit centres; and staff: child ratios are similarly identified for these centres and kindergartens.

The research evidence does not cast doubt on for-profit early childhood educare per se, but it does suggest that pressures to lower quality provision are more pronounced for this type.

Outcomes for Parents and Families

Research on the outcomes associated with a child's participation in early educare shows both concurrent and cumulative benefits for parents. Concurrent benefits include often enhanced relationships with children as the children bring their wider experiences and improved language, task and social skills into their interaction with parents.[13] Parents also make use of the time for their own education, employment, attention to younger sibling/s, and recreation (e.g. Hendricks et al 1993). Recent research on women receiving the Domestic Purposes Benefit who used the childcare subsidy found that a prime reason for those who did

---

[13] A national US study cited by Galinsky & Friedman (1993) found little difference in the time employed and non-employed mothers spent with their children of this age; and indeed found that fathers in families with employed mothers spent slightly more time with their children. Both parents in families where both were employed cut back on household work, sleep, and their own recreation.

not use it for training[14] was to alleviate maternal stress (McGirr 1993). McGirr suggests that this preventative use could be costed in terms of savings on foster care, justice system costs and other social services.

Esbensen (1985) notes Swedish work on the role which day care has played 'to decrease social isolation and segregation which all too often occurs in urban and suburban communities' (p 207-208). The 1993 ERO Review of Quality Performance in Early Childhood Centres notes the mutual support given by parents participating in a rural playcentre (ERO 1993, p 37). Sixty percent of playcentres in a recent national survey were located in rural or isolated settings (Currie & Zwaan 1993). The role of playcentre in providing social networks and reskilling women has been referred to frequently in the New Zealand literature on changes in the role of women (e.g. McDonald 1982, Rosemergy & Meade 1986). Studies of the US intervention programmes which included parental involvement and support also show cumulative benefits for parents through increased confidence in their role (Layzer et al 1989). Podmore (1984, p 104) found that mothers with playcentre training used fewer direct commands with children (inversely related to children's language development) than mothers without playcentre training.

Gifford (1992) notes:

> "childcare services are a part of a community's infrastructure of support which underwrites many other community and welfare services." (p 7)

The availability of affordable educare has been found to make substantial differences to maternal participation in school completion for teenage mothers (Phillips 1991), to post-secondary education[15] (Fadale & Winter 1988, who provide data for unemployed New Jersey women), and to the ability of women receiving government benefits to take up employment, and to remain in employment (Phillips 1991). It also plays a major role in the decisions of women from more advantaged families to rejoin the workforce (Blau & Robins 1988).

Affordable, reliable and adequate childcare also makes a difference to the productivity of employed parents (Galinksy & Friedman 1993). But where childcare is unreliable, or difficult to find, American studies have shown parents to have a higher rate of absenteeism, tardiness, use of sick leave (to look after their children) and stress (Galinsky & Hughes 1987).

---

[14] Many of the women spoken with were unaware of the policy link between entitlement to this subsidy and participation in education or work. Although most expressed interest, they had little knowledge of how to access training.

[15] In New Zealand, the availability of creches at universities and polytechnics has corresponded with a growth in 'mature' women students, often attending part-time.

Negative Outcomes for Early Childhood Educare

As the research into early childhood educare has become more sophisticated, it has increasingly shown the crucial role of the quality of educare provision in deciding what its outcomes for children and others will be. It is now clear, for example, that it is the quality of infant educare outside the home which matters, not the fact of it. The quality and appropriateness of intervention for disadvantaged children also seems more to the point than its occurrence.

The group nature of much early educare is one of its strengths (for example, in developing the social skills which enhance both language, confidence, and the ability to work with others). It is also the source of two weaknesses which have been identified in the literature: increased risk of illness in many centres, particularly those serving infants; and more noncompliant or aggressive behaviour, in poorer quality centres.

Doherty (1991, p 14) identifies three factors which are related to the likely occurrence of illness: handwashing (staff and children); centre size (small is safer); and group size (groups of more than 4 children under 3 are associated with increased incidence of diarrhoea, hepatitis, respiratory infection, and influenza).

The incidence of noncompliant or aggressive behaviour has, like infant care, attracted a great deal of research and discussion. The consensus among the research community now is that, while to some extent teachers have overrated assertive behaviour as aggressive (Hegland & Rix 1990, McGurk et al 1993, Scarr & Eisenberg 1993), programmes which do not provide sufficient age-appropriate activities, which are overcrowded, and which do not emphasize good social skills, can produce undesirable behaviour in children. Finkelstein (1982) shows how a change in programme emphasis to focus on social skills was enough to make a positive change to children's behaviours.

The negative possibilities inherent in group care, then, can be overcome.

4 FUNDING AND REGULATION FACTORS BEARING ON THE PROVISION OF EARLY EDUCARE

The research literature offers a number of studies of the effect of different approaches to funding and regulation on the provision of early childhood educare. More attention has been paid to relations between funding arrangements and access (number of places and affordability) than to the relation of these arrangements and outcomes for children.

Funding: Supply-side, Demand-side, or Both?

As with much of the research in this field, most of the funding studies come from the USA. Funding arrangements in the USA are very different from those in New Zealand. There are several tiers to funding of early childhood educare in the USA: Federal, State,

voluntary/religious agencies, and parents. Regulatory requirements (and enforcement) are set by states. Federal funding shifted in the early 1980s from supply-side to demand-side, in two major forms: personal tax-credits[16], and subsidies or vouchers. The tax credits have risen from 25% of 1977 federal spending to near 60% in 1988. A Congressional Budget Office study (1987) noted:

> "..a disproportionately larger share of federal child care dollars has been going to middle- and upper-income families in recent years, and consequently there has been a growing inequity in the distribution of federal child care benefits" (in Galinsky & Friedman 1993, p 114).

The study concluded that supply-side funding would provide more benefits to low income families. Fuller et al's recent study (1992) concludes:

> "The current approach to day care is essentially "welfare for the well off. Tax credits clearly reduce the cost burden of day care for relatively affluent families, but they fail to raise quality and fail to reach the working poor."

Analysis of changes in provision since the move to demand-side funding in the USA (Hayes et al 1991) note that while numbers of places have increased (but not evenly, for all income groups), quality overall does not appear to have improved, and the demand for affordable and adequate child care has yet to be met. Phillips (1991) and Reisman et al 1988 (p 75) note that affordability is a major obstacle to women wishing to move off the AFDC (a rough equivalent of NZ's DPB).

The combination of tax-credits and subsidies as the main channels of federal funding has however also meant that children from middle-income families are more likely to end up in poorer quality provision:

> "..affluent and some poor families benefit from high-quality centers, the latter due to subsidies, while middle-class parents can neither afford quality nor do they draw subsidies that will improve their access to higher quality care." (Fuller et al 1992, p 5)

During this time, staff wages have remained static, and very low. Blau (1991) concludes that, for the USA

> "The results of this paper indicate that wages of child care workers are for the most part unaffected by government subsidies to child care consumers and providers." (p 30)

---

[16] Federal tax credits for employers providing assistance with employee childcare costs are also available, but they are used by less than 1% of eligible employers, and have had 'only a marginal effect on the supply of care'. (Euben et al 1989)

The staff turnover rate in the USA remains very high, a matter of increasing concern because of its relationship with instability of care, and negative outcomes for children (Whitebook et al 1990).

Supply-side funding in the United States includes both subsidies to parents, which go to the regulated centres or family day care homes that they use, and programes such as the Child Care Food Program, which fund meals in centres serving low income families. The number of programmes directed at low income families has increased - but funding levels have decreased. This has led to a deterioration in access for low income families. After federal funding cuts to the Social Services Block Grant in 1981, 35 states spent less on child care by 1985, and 24 states were serving fewer children (Hofferth & Phillips 1987). The Federal provision in this respect has been called 'patchwork'.

There is mounting pressure in the USA to change both funding arrangements and level of funding (eg Davenport et al 1985, Hayes et al 1991). Analysts of the existing arrangements and their effects have recommended improvements in the levels of subsidies and/or tax-credits (where these can be made available to low income families, and at the time they are needed rather than through retrospective payment); they have also recommended the channelling of a greater proportion of the overall funding toward service operational costs, in particular to increase staff salaries (and decrease turnover), and to improve the training of staff. They also recommend cutting down the number of Federal and state funding programmes, as part of a move to provide more simplicity and coherence (e.g. Galinsky & Friedman 1993, Hayes et al 1991, Phillips 1991, Riesman et al 1988).

New York State has recently tagged some provider-funding to be used to increase staff salaries, following successful programmes in Toronto and Massachusetts. These programmes were of particular benefit to centres used by low income families (Fried & Whitebook 1989), and lowered turnover rates.

The Trained Staff Grant for childcare centres in New Zealand was designed to improve levels of staff training, and to act as an incentive to employ trained staff. At least 50% of the grant was to go to staff salaries. It had a positive impact on staff attention to their programmes, and increased the number of trained staff in childcare centres. It also, in some cases, allowed parental fees to be held. It was a more popular grant with child care providers than the existing fee subsidies. The main problems with the grant were its retrospective payment, and the then lack of a pool of trained staff (Wylie et al 1988).

This use of funding measures to provide an incentive to improve quality was lost when bulk funding was introduced in 1990. The incentive was shifted to the requirements of charters, which it was intended would assure quality staffing through specifying adequate numbers of trained staff in each centre). That requirement for staff qualifications was diluted in 1991.

Vouchers (Income-Related Subsidies)

Some subsidies to parents have been in voucher form (though rarely cash). There are 6 voucher schemes or experiments written up in available literature (Benya et al 1984, Catterall & Williams 1985, Clow 1984, Freis & Miller 1980, Freis & Miller 1984, Parker 1989, Scoll & Engstrom 1985). Most of the schemes have been limited to efforts to extend the number of places available for low income women, or for women wanting to get off welfare, in situations where there have not been enough places for them in existing public day care centres. That is, they have been a mechanism to improve supply and access which could not be provided by the market alone. It was also less expensive to encourage the expansion of places in existing private centres and care in private homes than to set up new centres where they were most needed. A Californian experiment (Freis and Miller 1984) did go wider and encouraged more diversity of provision, and greater choice for families, such as the setting up of centres at public schools.

None of the experiments have used vouchers as a system wide entitlement, that is, for all income groups. Most of the experiments have been limited to relatively small geographical areas. They have used welfare education funding and administration rather than education funds or systems. A couple of the experiments set up central information systems to assist voucher users in their choice; one screened two films about choosing a suitable early childhood service for potential users. However, there appears to have been little support offered to providers to address issues of quality and adequacy; and little auditing of providers.

In part this may be because that would have added costs to schemes whose basic justification was to decrease women's dependence on state welfare. The vouchers enabled eligible women who could not otherwise afford child care to use it. Their use resulted in some improved access for a wider group of families within a limited range, but without regard for the educational/developmental needs of children.

Like New Zealand's income-related early childhood fee subsidies - which is what in fact they most resemble - the voucher schemes are liable to have heavier take-up than government may budget for (Wylie et al 1988). Several of the schemes in fact had to limit numbers (even of those eligible), and set up waiting lists.

Gifford (1992) in evaluating the use of subsidies in Australia noted that because they were uncapped "more and more pressure [is placed] on the funding of other areas of the [overall educare] programme." (p 4) She also draws attention to the problem of families who are at the margins for subsidy eligibility; the difficulties for families and providers if the subsidy amount is still not enough to enable families to access early childhood educare; and the exclusion of children from families with middle/high incomes who may need more educare than they can afford.

Evaluation of the voucher experiments in the United States has been limited: only one study looks at quality of provision as well as access and costs (Parker 1989). This study found no improvements in quality, and some increased costs for the lowest income women - compared to slightly lower costs for women at the higher end of the eligible band.

Administrative Costs

Administration costs for government are given in one voucher experiment, (Catterall & Williams 1985), and they seem reasonably high: in early 1980s terms, $12.43 per child week, when the voucher allowance was $37.50 per child in day care centre, $52.50 per infant, and $16.90 in family day care (private home). Government administration costs in New Zealand for the income subsidy scheme in 1990 before its expansion in 1991 were $4.5 million for $8.9 million paid out (CECUA 1991, p. 9), though after switching to computers and automatic sending of claim forms, this was reduced to $1.731 million administrative costs for $17.37 million paid out in the 1992-1993 financial year (Mitchell 1994).

Administration for other forms of funding may also impose some additional costs. A study of family day care provision in Australia (Petrie 1991) found that funding which was based on EFTs (Equivalent Fulltime places) posed additional costs where those EFTs were filled by several children rather than one:

> "..it could be said that an EFT comprising two children is twice as much work as an EFT of one full-time child." (p 157)

The additional costs are largely met and felt by centres.

Another major problem for providers and would-be users associated with this Australian form of EFT funding was that the amount of EFT funding available to a given family day care scheme was based on central assessment of local needs. This approach may have been intended as a budget cap, to contain the amount sought through EFT funding if left to parental choice. One of its effects, however, was also a decrease in the supply of places:

> "... being funded on actual EFT causes a downward spiral: not enough staff are employed because of insufficient operational funding. This leads to lower EFTs because of limited ability to service child care demands, which in turn leads to fewer staff and so on." (p 157)

This downward spiral matches the overseas literature on the effects on schools if the bulk of their funding is from EFTs (e.g. Davies & Ellison 1991).

Pressures from EFT funding are also reported in New Zealand kindergartens, which moved to bulk funding based on roll numbers in early 1992 (Wylie 1993). Here the main pressure has been to increase rolls to the maximum allowed by the kindergarten's physical space, with a subsequent rise in group size in many kindergartens to 45. This is more than double the recommended group size for this age-group from the research on quality and outcomes, which is 20, with a staff ratio of 1:10 (Effects of Group Size... 1993), rather than the New Zealand 1:15. The pressure on kindergartens is partly due to the amount per child; and partly due to the form of funding, which leads associations to focus more on the individual financial viability of each kindergarten, rather than the specific needs of the area it serves.

This pressure already existed for childcare centres, which have been primarily EFT funded, and shows in ebbs and flows of provision related to profitability or break-even rather than community need. Closure of some unviable kindergartens has already been mooted even though there may be a need for affordable early childhood education, or parental choice of early childhood educare, in the area they served. Cross-subsidization between kindergartens is becoming more difficult, and resource gaps between provision in low income and middle-high income areas are growing (Wylie 1993). Some associations which had received less per child than the bulk funding rate introduced in 1992 did benefit, and have been able to improve staffing in some kindergartens.

Similar resource gaps related to the growing reliance on parental income are also beginning to appear in Sweden, which cut back its spending on education in 1990, after the election of a conservative government. Municipalities are now given bulk grants to cover all sectors of education. On the grounds that municipalities are best placed to make their own allocation decisions, regulations to do with such things as group size and staff: child ratio have been left to municipalities. Due to the direct competition with other educational sectors produced by this approach, there has been a cut to early childhood educare spending, and an increase in group size and staff: child ratios, particularly in lower income areas (Andersson 1993c, Pramling 1993). The research from Sweden showing longterm positive outcomes for children who participated in early educare as infants predates these relaxations of ratio and group size, and cutbacks in spending.

Regulations

On the whole, the evidence from the research literature is that regulations which are based on quality indicators are linked with good provision of early childhood educare (eg Whitebook et al 1990). The one study which appears to show a curvilinear relationship between full and partial compliance with regulations in one US state (Fiene & Melnick 1990) in fact shows only a slight drop in quality between centres with 95% compliance and those with 100% compliance. Given that state regulations vary enormously, with quite a few providing minimal or worse standards, one would need to know the exact areas of non-compliance to decide whether or not this was of significance. This study has not been duplicated elsewhere.

But as the Fiene and Melnick study does makes clear, the existence of regulations does not of itself guarantee compliance. There are increasing calls in the US for proper enforcement of regulations, including adequate and appropriate staffing for licensing and enforcement agencies, sanctions for non-performance, and unscheduled visits (Kagan & Newton 1989, Reisman et al 1988).

Only one study from overseas provides empirical evidence of barriers for providers arising from regulations (Gormley 1990). These barriers arise from local town-planning rules and processes, which appear from his description to be somewhat more arduous than those in New Zealand. Improved staff: child ratios set down in regulations in two American states

were in fact associated with substantial rises in centre numbers, rather than the reverse (Effects of Group Size... 1993, p 67).

5 SOME CONCLUSIONS FOR THE PRESENT NEW ZEALAND SITUATION

What research into early childhood educare can tell policymakers is that there is solid evidence that early childhood educare has positive outcomes for children - where it is of adequate quality. If the quality is poor, the outcomes are diluted, or even negative. What research on educare cannot tell policymakers is that a certain quantity at a certain time will produce certain benefits.

The research in this field can also tell policymakers that positive outcomes extend beyond individual children and their families to the societies and economies in which they participate.

These positive outcomes are likely to be most pronounced for children from disadvantaged backgrounds, but they exist for all children. While the research cannot specify optimal durations or frequencies of early childhood educare, it is clear that once begun, it should not be interrupted; and that an earlier rather than later start is better for children from disadvantaged or minority backgrounds. This overall finding has implications particularly for the New Zealand programmes which serve Maori and Pacific Island children.

It is safe to use full day care from infancy, provided that it is of good quality. This has implications for the need to pay close attention to the licensing and/or chartering requirements for child care centres and family day care homes, and to their monitoring (including unannounced visits). Educare for this age group would also benefit from being set in the context of labour-market policy (including training), family policy, and welfare provisions for single mothers.

While there are differences in the programmes and care offered by home-based and centre-based care, and a tendency for there to be some differences between for-profit and not-for-profit, no one type is clearly superior, for all children. The implications of this would seem to be the desirability of providing quality assurance for every type of service, and of minimizing the kinds of pressure (through funding formulae and administrative requirements) which can lead to poor quality provision.

The provision and quality of New Zealand early educare looks good in comparison with the United States provision of early childhood education and care, which is the source of most of the available literature on outcomes of early childhood educare. The analysis of the complex and fragmented nature of administration of early childhood educare in the USA, its extreme variations in quality, and its limited availability, throws New Zealand's more systematic approach into favourable relief as one which is much closer to obtaining the optimal outcomes from early childhood educare.

From what can be learnt and deduced from the literature, there would appear to be no firm reason to make major changes to the New Zealand range of early childhood educare services supported by a mixed-model funding system, backed by appropriate regulations and enforcement. Comparison with overseas confirms the usefulness of the approach taken here, which is to have funding policy serve both the goals of access and of adequate quality. If the provision is of less than adequate quality, then the outcomes for children will be neutral for some (cost-inefficient), and negative for others; and the long-term social and public spending outcomes will be less positive.

Heavy reliance overseas on either tax-credits or income-related subsidies has done little to improve or maintain quality and access. Each form of funding creates continuing difficulties with containing expenditure, and with the treatment of people whose income falls on the margins, at cut-off points. Income-targeted funding appears to have heavier administrative costs than other forms of funding. It also appears to gradually erode other forms of state support (e.g. Gifford 1992), and thus could unbalance the design and effectiveness of an overall system of funding. For these reasons, it would seem unwise, and unnecessary, to expand the use of income-related subsidies.

While the New Zealand form of per-capita (bulk funding) funding has worked reasonably well for childcare centres, it needs further fine-tuning in its extension to kindergartens. This is particularly important if we are to continue to have early childhood educare services which provide the social mix which has been associated with positive outcomes (e.g. Paseo 1987, Wright 1983), and to provide affordable sessional care.

Funding or enforcement incentives to improve training levels and the proportion of trained staff in centres are desirable. They can only be given in the form of supply-side funding (to providers). Including such incentives in funding to providers also allows the Government to ensure it is getting the quality of early childhood educare services which children need.

Access to bulk funding for family day care should continue to be only through schemes. Incentives for training, and for the employment of well qualified coordinators would appear from the emphasis on attitude and education in the overseas literature on this sphere to be desirable (e.g. Pence and Goelman 1991).

Improved monitoring of quality and enforcement are also necessary. Some of the tools which have been developed to provide quick national and by-service checks of overall quality and use of Government funds (eg Gardiner 1991, Fiene & Melnick 1990) could be utilized so that we have better data-bases readily available for policymakers.

Finally, it is crucial in any analysis of the provision of early childhood educare from a national perspective that the starting point is the desired outcomes for children, their families, and the public good. This leads on to questions of how best to ensure both access and quality. The research literature surveyed here provides some very useful pointers - and cautions.

REFERENCES

Note: ED refers to material available on ERIC microfiche from the National Library of New Zealand.

Alexander, Shirley & Terry Lovelace (1988) *Lafayette Parish Early Childhood Project: 1987-1988 Academic Year. Evaluation Report*, Lafayette Parish School Board, ED 299 051

Andersson, Bengt-Erik. (1993a) Long-term Effects of Early Day Care in Relation to Family Type and Children's Gender. Department of Child and Youth Studies, Stockholm Institute of Education, Sweden

_____, Kihlblom U, Sandquisk K (1993b) The Rising Birth Rate in Sweden: A Consequence of the Welfare state and Family policy? *Childhood:* 1: pp.11-25.

_____ (1993c) personal communication

Applegate, Brooks (1986) A Meta-Analysis of the Effects of Day Care on Development: Preliminary Findings Paper presented at the Annual Meeting of the Mid-South Educational Research Association ED280 613

Barnett, W. Steven (1991) Benefits of Compensatory Preschool Education *The Journal of Human Resources* XXVII (2), 279-312

Benn, R. (1985) Factors associated with security of attachment in dual career families. Paper presented to biennial meeting of the Society for Research in Child Development

Benya, Larry et al (1984) *Six-Month Evaluation of the Maryland Day Care Voucher Demonstration* Arlington,VA: Bell & Associates Inc ED 245 844

Berk, Laura, E. (1985). Relationship of Caregiver Education to Child-Oriented Attitudes, Job Satisfaction, and Behaviors Toward Children. *Child Care Quarterly* 14(2) 103-129

Blau, David M & Philip K Robins (1988) Child-Care Costs and Family Labor Supply *The Review of Economics and Statistics* LXX (3) 374-381

Blau, David M. (1989). The Child Care Labor Market *The Journal of Human Resources*. XXVII.I. 9-39

Bowlin, Flora & Kenneth Clawson (1991) The Effects of Preschool on the Achievement of 1st, 2nd, 3rd and 4th Grade Reading and Mathematics Students, paper presented at annual meeting of the Mid-South Educational Research Association ED 340 486

Bralic E, Sonia (1983) Pilot program of early stimulation: follow-up of children at six years of age *Preventing School Failure: The Relationship Between Preschool and Primary Education* International Development Research Centre, Ottawa 20-28

Bredekamp, Sue (1989) *Regulating Child Care Quality - Evidence from NAEYC's Accreditation System* Washington, DC NAEYC

Brock, Sharon L. (1991) *Achievement and Enrollment Evaluation in the early Childhood Development Program* School District of Kansas City, Missouri ED 345 861

Bruce, Tina, (1991) *Time to Play in Early Childhood Education*, Hodder & Stoughton, London.

Campos, James (1985) *A Spanish Language Bilingual Preschool* Carpinteria Unified School District, California

Catterall, Barbara & Carol Williams (1985) *Voucher Subsidized Child Care: The Hudson County Project* Trenton, NJ: New Jersey State Dept. Of Human Services ED 267 897

Clarke-Stewart, Alison (1985) What Day Care Forms and Features Mean for Children's Development ED 258 731

Clow, Suzanne (1984) *The Voucher Project: Final Report* Salt Lake City: Phoenix Institute ED 272 319

Copple, C.E., Cline, M.G. & Smith, A.N. (1987) *Path to the Future: Long-Term Effects of Head Start in the Philadelphia School District* Administration for Children, Youth, and Families, Washington, D.C. Head Start Bureau ED 289 598

Cryan, John R et al (1992) Success Outcomes of Full-Day Kindergarten: More Positive Behavior and Increased Achievement in the Years After *Early Childhood Research Quarterly* 7(2) 187-203

Currie, Gail & Zwaan, Monique (1993). *A National Survey to Investigate the Effects on Playcentres of Ministry of Education Training Requirements for Licensing*. Research Compiled for New Zealand Playcentre Federation.

Davenport, Amy et al (1985) *The Economics of Child Care: Taking Care of Vermont's Most Valuable Resource* Vermont Governor's Commission on the Status of Women's Childcare Task Force, Montpelier ED 269 129

Davies,B & L Ellison (1991) Changing Financial Provision Leads to a Radical Reform of the English Education System mimeo

Doherty, Gillian (1991) *Factors Related to Quality in Child Care: A Review of the Literature* Child Care Branch, Ontario Ministry of Community and Social Services

Education Review Office (1993) *A Review of Quality Performance in Early Childhood Centres - A Report to the Ministry of Women's Affairs* Wellington

The Effects of Group Size, Ratios, and Staff Training on Child Care Quality *Young Children January 65-67*

Esbensen, Steen (1985) *The Effects of Day Care on Children, Families and Communities: A Review of the Research Findings* University of Quebec (Hull)

Euben, Donna, Reisman, Barbara ((1989). *Employer Tax Credits for Child Care: Asset or Liability?* Child Care Action Campaign. CCAC Special Report No. 1: State Financing Alternatives Project. Child Care Action Campaign, New York, NY.

Fadale, LaVerne M & Winter, Gene M (1988) *Impact of Campus-Based Childcare on the Academic* Success of Student-Parents at SUNY Community Colleges ED307 941

Farnsworth, Margaret, Schweinhart, Lawrence J., & John R. Berrueta-Clement (1985) Preschool Intervention, School Success and Delinquency in a High-Risk Sample of Youth *American Educational Research Journal* 22(3) 445-464

Field,T., (1991) Quality infant day care and grade school behavior and performance *Child Development* 62 863-870

_____, Masi,W., Goldstein,S., Perry,S., & Parl, S (1988) Infant Day care facilitates Preschool Social Behavior *Early Childhood Research Quarterly* Vol 3, 341-359

Fiene, R, & Melnick, S.A. (1990) Licensure and Program Quality in Early Childhood and Childcare Programs Paper presented at the annual American Educational Research Association conference

Finkelstein, N.W. (1982) Aggression: Is it Stimulated by Day Care? *Young Children 37(6), 3-8*

Fowler, W (1978) *Day Care and Its Effects on Early Development* Toronto: OISE

Freis, Ruth & Miriam Miller (1980) *The Economic Impact of Subsidized Child Care: An Economic Analysis of Valley Child Care from November 1976 to June 1979*

_____ *(1984) Vendor-Voucher Systems: A Parent Selected Child* Care Subsidy Program That Works ED 251 174

Fried, Mindy and Marcy Whitebook (1989) Innovative Approaches to the Salary Dilemma: The Massachusetts and Toronto Experiments. Child Care Employee Project.

Fuerst, J.S. & Fuerst, Dorothy (1993) Chicago Experience with an Early Childhood Program: A Special Case of the Child Parent Center Program *Urban Education* 28(1) 69-96

Fuller, B., Raudenbush, S.W., Wei, L.M., & Holloway, S.D. (1992) Can Government Raise Child Care Quality? The Influence of Family Demand, Poverty, and Policy. Harvard Graduate School of Education, Cambridge, Mass

Galinsky, Ellen & Diane Hughes (1987) *The Fortune Magazine Child Care Study*

_____ & Dana F Friedman (1993) Education Before School:Investing in Quality Child Care New York Scholastic Inc for the Committee for Economic Development

Gardiner, C.W. (1991) *Review of Early Childhood Funding - Independent Report*

Gifford, Jean (1992) *ChildCare Funding Reassessed: Operational Subsidies, Fee Relief and Taxation Measures* Australian Early Childhood Association & the National Association of Community Based Children's Services

Gormley Jr., William T. (1990) Regulating Mr. Rogers' Neighbourhood: The Dilemmas of Day Care Regulation. *Brookings Review*, Fall, 21-28

Griffin, Abbey & Fein, Greta (1988) Infant Day Care: The Critical Issues *ERIC Digest* ED 362

Gullo, Dominic F., & Christine B. Burton Age of Entry, Preschool Experience, and Sex as Antecedents of Academic Readiness in Kindergarten *Early Childhood Research Quarterly* 7(2) 175-186

Hai, D.M., Creighton, J.M., Laub, K.W., & Tirrell, L.L. (1982) The Economic Impact of Day Care *Child Care Quarterly 11(2)* 218-220

Hamilton, B (1993) Personal communication

Hans, Sydney L. (1987) Syracuse University Longitudinal Follow Up Study; Questionnaire Ratings of Children's Behaviors, Attitudes and Achievement. Paper presented to the biennial meeting of the Society for Research in Child Development ED 288 649

Hayes, Cheryl D., John L. Palmer, & Martha J. Zaslow (1991) *Who Cares for America's Children? Child Care Policy for the 1990s* Washington D.C. National Academy Press

Heath, Robert W., & Gerald D. Platt (1988) Do Kamehema Schools/Bishop Estate Preschools Help Hawaiian Children Succeed in the Public Schools? ED 296 782

Hegland, Susan M., & Rix, Mary K. (1990). Aggression and Assertiveness in Kindergarten Children Differing in Day Care Experiences. *Early Childhood Research Quarterly*, Vol. 5, pp. 105-116.

Helmich, Edith (1985) *The Effectiveness of Preschool for Children from Low-Income Families: A Review of the Literature* Illinois State Board of Education, Springfield, Dept. of Planning, Research and Evaluation

Hendricks, Anne & Anne Meade, with Cathy Wylie (1993) *Competent Children - Influences of Early Childhood Experiences Pilot Study Report* Wellington: NZCER & Faculty of Education, Victoria University of Wellington

Hofferth, Sandra L & Deborah A Phillips (1987) Child Care in the United States, 1970 - 1995 *Journal of Marriage and the Family 49, 559-571*

Howard, Esther (1986) A Longitudinal Study of Achievement Associated with Participation in a Public School Kindergarten. Paper presented at the annual meeting of the Mid-South Educational Research Association

Howes, Carollee (1990) Can the age of entry into childcare and the quality of childcare predict adjustment in kindergarten? *Developmental Psychology* 24, 53-57

_____ (1991) Infant Child Care *ERIC Digest* ED 333 963

_____ & Hamilton Claire E. (1992) The Changing Experience of Child Care: Changes in Teachers and in Teacher-Child Relationships and Children's Social Competence with Peers. *Early Childhood Research Quarterly*, Vol. 8, pp. 15-32.

_____ D. Phillips, M Whitebook (1992) Thresholds of Quality: implications for the social development of children in center-based child care *Child Development* 63 449-460

Joint Economic Committee (1989) *The Economic and Social Benefits of Early Childhood Education* Hearing before the Subcommittee on Education and Health of the Joint Economic Committee, Congress of the United States, 101st Congress, 1st session ED 319 485

Jones, Molly M (1988) *The Longitudinal Evaluation of Early Childhood Education Interim Report* ED 305 142

Kagan, Sharon Lynn & James W. Newton (1989) For-Profit and Nonprofit Child Care: Similarities and Differences *Young Children* 45(1) 4 - 10

Kisker, E.E. (1989) panel contribution in *Quality in Child Care: What Is it and how can it be Encouraged?* (ed Segel) ED345 851

Kisker, E.E., Hofferth, S.,Phillips, D.A., & Farquhar,E. (1990) *A Profile of Child Care Settings: Early Education and Care in 1990* Princeton, NJ Mathematica Policy Research

Lamb, Michael E & Kathleen J. Sternberg (1990) Do We Really Know How Day Care Affects Children? *Journal of Applied Developmental Psychology* 11(3) 351-379

Larsen, Jean & Clyde C Robinson (1989) Later Effects of Preschool on Low-Risk Children *Early Childhood Research Quarterly* 4(1) 133-144

Lauder, Hugh & David Hughes (1990) School inequalities and differences in social outcomes *NZ Journal of Educational Studies* 25(1) 37-60

Layzer, Jean I et al (1989) *Evaluation of Project Giant Step Year Two report: The Study of Program Effects* Cambridge, Mass: Abt Associates ED 316 337

Leben, Clay (1987) *Prekindergarten: Full Day Versus Half Day* Austin Independent School District, Texas ED 287 895

Lee, Valerie E et al (1989) *Are Head Start Effects Sustained? A Longitudinal Followup Comparison of Disadvantaged Children Attending Head Start, No Preschool, and Other Preschool Programs ED 309 880*

Levin, Henry M (1991) Cost-benefit and cost-effectiveness analyses of interventions for children in poverty in Aletha C Huston (ed) *Children in Poverty - Child Development and Public Policy* Cambridge: Cambridge University Press 241-259

Levine, Marlene, Wyn, Helen, & Asiasiga, Lanuola (1993) *Lone Parents and Paid Work: A Study of Employment Patterns and Barriers, and Options for Change* Wellington: Social Policy Agency

McCartney, K., Scarr S,. Phillips, D.A., Grajek,S. (1985) Day care as intervention: comparisons of varying quality programs *Journal of Applied Development & Psychology* 6 247-260

McDonald, Geraldine (1982) *Working and Learning* Wellington: NZCER

_____ (1989). Pupil Progress, Reading Recovery, and the 1:20 Teacher Pupil Ratio Policy in the Junior School. in *More Teachers, Fewer Pupils: A Study of the 1:20 Teacher-Pupil Ratio Policy in the Junior School* (McDonald et al) 69-86 Wellington: New Zealand Council for Educational Research.

McGee, R.O., Silva, P.A., & Williams, S.M. (1984) Behaviour problems in a population of seven year old children with stable behaviour problems *Journal of Child Psychology* and Psychiatry 25 573-586

McGirr, Gloria (1993) personal communication

McGurk, Harry, Caplan, Marlene, Hennessy Eilis, & Moss, Peter (1993) Controversy, Theory and Social Context in Contemporary Day Care Research *Journal of Child Psychology and Psychiatry* 34(1) 3-23

McKinnon, Jennifer et al (1982) *A Comparative Study of the Effects of Preschool Education on Middle Class Children* Lakeview Montessori School, Puce, Ontario

Marcon, Rebecca (1990) *Early Learning and Early Identification: Final Report of the Three Year Long Study* ED 331 934

Maryland State Department of Education (1991) *An Analysis of the Long-term Effects of the Extended Elementary Prekindergarten Program* ED 327 337

Meade, Anne (1985) *The Children Can Choose - A Study of Early Childhood Programmes in New Zealand* Wellington:NZCER

Melhuish, E.C., Mooney, A., Martin, S., Lloyd, E (1990) Type of day care at 18 months: 1. Differences in interactional experience *Journal of Child Psychology and Psychiatry* 31 849-860

Milburn, Nona (1982) *The Effects of Preschool Attendance on Social Experience within the Family* MA thesis; University of Canterbury

Mitchell, L (1994) Personal Communication

Neale, Jenny (1982) *Barnardo's Family Day Care Pre-Test Report*

Ochiltree, Gay & Don Edgar (1990) *The Effects of Non-Maternal Care in the First 12 Months of Life on Children in the First Year of School - Preliminary Findings from a 2 Stage Study* ED 350 070

Osborn, A.F. & Milbank, J.E. (1987) *The Effects of Early Education: A Report from the Child Health and Education Study* Oxford: Clarendon Press

Palmerus, Kerstin (1991) Quality Aspects of Swedish Family Day Care and Center Care paper to Family Day Care Conference, Manly, Australia

Parker, Michael D. (1989). Vouchers for Day Care of Children: Evaluating a Model Program. *Child Welfare*, Vol. LXVIII, No. 6 633-642

Paseo Public Schools' Early Childhood Programs Studies (1987) *Effectiveness of Preschools and Comparing Funding for Full-day, Half-Day, and Alternate Day Kindergartens* ED 294 648

Paterno, JoAnna (1984) *Mandatory Kindergarten: Will it Make a Difference in Kentucky?* ED 264 007

Pence, Alan R. & Hillel Goelman (1991) The Relationship of Regulation, Training, and Motivation to Quality of Care in Family Day Care *Child & Youth Care Forum* 20(2) 83-101

Petrie, Andrea (1991) *Child Care in the 90s: Responding to Community Needs in Australia.* Report of Research Project "National Utilisation Trends in Family Day Care" for The National Family Day Care Council.

Phillips, D.A. (1991) With a little help: Children in poverty and child care in Aletha C Huston (ed) *Children in Poverty - Child Development and Public Policy* Cambridge: Cambridge University Press 158-189

Pinkett, K. E. L. (1985) Preschool Attendance and Type of Experience in Advantaged Children: Long-Term Effects by Third Grade paper presented at annual meeting of the National Association for the Education of Young Children ED 265 942

Podmore, V.N. (1984) *Aspects of Maori and Pakeha Mothers' Interactions with Their Pre-school Children: Ethnicity, Education, Interactive Behaviour, and Child Assessment.* PhD Thesis Massey University

_____, & Craig, Barbara H. (1991). *Infants and Toddlers in New Zealand Childcare Centres.* Wellington: NZCER

_____ (1993) *Education and Care - A Review of International Studies of the Outcomes of Early Childhood Experiences* Wellington: NZCER

Powell, D.R. (1989) *Families and Early Childhood Programs* Research Monographs of the National Association for the Education of Young Children Washington DC: NAEYC ED 309 872

Pramling, Ingrid (1993) personal communication

Rachal, Janella, & Garbo, Diane (1988) A three year longitudinal study of the sustained effects of early childhood education on the kindergarten and first grade performance of former program participants. Paper presented at the annual meeting of the American Educational Research Association ED 295 757

Ramey, C.T., Dorval, R., & Baker-Ward,A. (1983) Group Day Care and Socially Disadvantaged Families: Effects on the Child and Family In S Kilmer (ed) *Advances in Early Education and Day Care* Vol III, Greenwich, Conn: JAI Press, 69-106

Ramey, C.T. (1988) *The Effectiveness of Preschool and School-Age Intervention for Children At-Risk for Learning Difficulties. Final Report* North Carolina University, Chapel Hill; Frank Porter Graham Center ED 345 420

Reynolds, Arthur et al (1991) Multiple Influences on Early School Adjustment: Results from the Longitudinal Study of Children at Risk paper presented at American Educational Research Association conference ED 334 019

Reisman, Barbara, Amy J Moore, & Karen Fitzgerald (1988) *Child Care:* the Bottom Line New York: Child Care Action Campaign

Rosemergy, M & A Meade (1986) Family Networks *set No 2*

Rosenthal, Miriam K (1991) Behaviors and Beliefs of Caregivers in Family Day Care: The Effects of Background and Work Environment *Early Childhood Research Quarterly* 6(2) 263-284

Rothenberg, J.J. (1990) Long Term Outcomes of an Early Intervention: Performance on Three Problem-Solving Tasks ED320 917

Scarr, Sandra & Eisenberg, Marlene (1993) Child Care Research: Issues, Perspectives and Results *Annual Review of Psychology* 44 613-644

Scarr, Sandra, Eisenberg, Marlene & Deater-Deckard, Kirby (1993). *Measurement of Quality in Child Care Centers*. University of Virginia.

Schaefer, L. (1985) Longitudinal evaluation of the effects of two compensatory preschool programs on fourth-through-sixth-grade students *Developmental Psychology* 21(4) 702-708

Schweinhart, Lawrence & David Weikart (1986) Early Childhood Development Programs: A Public Investment Opportunity *Educational Leadership* November, 4-12

Scoll,B., & R Engstrom (1985) *Hennepin County Grant Purchase of Child Day Care Through a Voucher System: an Evaluation and use of Technology to Enhance Service Delivery* Hennepin County Commission ED262 861

Seitz,V., Rosenbaum, L., & Apfel, N.H. (1985) Effects of Family Support Intervention: a ten-year follow-up *Child Development* 56, 376-391

Sevigny, Karen E (1987) *Thirteen Years After Preschool - is there a Difference?* Detroit Public Schools, Office of Instructional Improvement ED 299 287

Sigel, I.E. (1991) Preschool Education: For Whom and Why? *New Directions in Child Development* 53, 83-91

Silverstein, L.B. (1991) Transforming the Debate about Child Care and Maternal Employment *American Psychologist* 46, 1025-1032

Smith, Anne B & Bain, H (1978) Dependency in Daycare and Playcentre Children *NZ Journal of Educational Studies 13(2) 163-173*

_____, Inder, P.M., & Ratcliff, B. (1993) Relationships between Early Childhood Centre Experience and Social Behaviour at School *NZ Journal of Educational Studies* 28, 13-28

SPR Associates (1986) *An Exploratory review of Selected Issues in For-profit Versus Not-for-Profit Child Care* Paper prepared for the Special Committee on Child Care, Toronto

Sylva, K & J Wiltshire (1993) The Impact of Early Learning on Children's Later Development - A Review Prepared for the RSA Inquiry 'Start Right' *European Early Childhood Education Research Journal* 1(1) 17-40

Thornburg, Kathy R., Pearl, Peggy, Crompton, Dwayne, Ispa, Jean M. (1990). *Development of Kindergarten Children Based on Child Care Arrangements*. From Early Childhood Research Quarterly, Vol. 5, pp. 27-42.

Vandell, D.L. (1979) Effects of a Playgroup Experience on Mother-Son and Father-Son Interaction *Developmental Psychology* Vol 15 (4), 379-385

_____, Henderson, V.K., & Wilson, K.S. (1988) A longitudinal study of children with day-care experiences of varying quality *Child Development 59 1286-1292*

Verry, D. (1990) *An Economic Framework for the Evaluation of Child Care Policy* Paris:OECD

Washington State Office of Community Development (1990) *ECEAP Longitudinal Study - A Summary Report* ED 356 878

West, S (1988) *A Study on Compliance with the Day Nurseries Act at Full-Day Child Care Centres in Metropolitan Toronto* Prepared for the Toronto Area Office of the Ministry of Community and Social Services

Whitebook,M., Howes, C., and Phillips, D. (1990) *Who Cares: Child Care Teachers and the Quality of Care in America: Final Report of the National Child Care Staffing Study* Child Care Employee Project, Oakland, California

Woodhead, Martin (1990) Transactional models of early education effectiveness - What is the message for policy? *Early Child Development and Care*, Vol. 58, pp.129-141.

Wright, M. (1983) *Compensatory Education in the Preschool: A Canadian Approach* Ypsilanti, Michigan: High Scope Press

Wylie, Cathy, Smith, Lynne and Vize, June (1988) *The Effects of Funding Policy on Childcare* Families and Early Childhood Programme, Report No. 9. NZCER.

Wylie, Cathy (1993) *The Impact of Salary Bulk Funding on New Zealand Kindergartens - Results of the Second National Survey* Wellington: NZCER

Young-Loveridge, Jenny (1987) *The Development of Children's Number Concepts* University of Canterbury Education Department report 87-1, Christchurch

Ziegelman, Elinor G (1986) *The Effects of Home-based and Center-based Teaching Strategies on Head Start Children's Language Development* ED 287 606

Zigler, Edward F (1987) Formal Schooling for Four Year Olds? No *American Psychologist* 42(3) 254-260